SEQUENCE LISTING

<110> Leppla, Stephen H.
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Netzel-Arnett, Sarah
Hansen-Birkendal, Henning
Bugge, Thomas
The Government of the United States of America
as represented by the Secretary of the
Deapartment of Health and Human Services

<120> Mutated Anthrax Toxin Protective Antigen Proteins That Specifically Target Cells Containing High Amounts of Cell-Surface Metalloproteinases or Plasminogen Activator Receptors

<130> 015280-405100US

<140> US 10/088,952
<141> 2002-03-22

<150> US 60/155,961
<151> 1999-09-24

<150> WO PCT/US00/26192
<151> 2000-09-22

<160> 28

<170> PatentIn Ver. 2.1

<210> 1
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:furin-like protease cleavage sequence

<400> 1
Arg Lys Lys Arg
1

<210> 2
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:matrix metalloproteinase (MMP)-recognized cleavage site, gelatinase favorite substrate sequence

<400> 2
Gly Pro Leu Gly Met Leu Ser Gln
1 5

<210> 3
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:matrix metalloproteinase (MMP)-recognized cleavage site, gelatinase favorite substrate sequence

<400> 3
Gly Pro Leu Gly Leu Trp Ala Gln
1 5

<210> 4
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:tissue-type plasminogen activator (t-PA) and urokinase-type (u-PA) recognized cleavage site, physiological substrate sequence

<400> 4
Pro Cys Pro Gly Arg Val Val Gly Gly
1 5

<210> 5
<211> 7
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<220>
<223> Description of Artificial Sequence:urokinase-type plasminogen activator (u-PA)-recognized cleavage site, favorite sequence

<400> 5
Pro Gly Ser Gly Arg Ser Ala
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<210> 6
<211> 7
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<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:urokinase-type plasminogen activator (u-PA)-recognized cleavage site, favorite sequence

<400> 6
Pro Gly Ser Gly Lys Ser Ala
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<210> 7
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:tissue-type plasminogen activator (t-PA)-recognized cleavage site, favorite sequence

<400> 7
Pro Gln Arg Gly Arg Ser Ala
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<210> 8
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
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<400> 8
aaaggagaac gtatatga 18

<210> 9
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<220>
<223> Description of Artificial Sequence:phosphorylated primer R1

<220>
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<222> (1)
<223> n = phosphorylated t

<400> 9
ngagttcgaa gatttttgtt ttaattctgg 30

<210> 10
<211> 52
<212> DNA
<213> Artificial Sequence

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<223> Description of Artificial Sequence:mutagenic phosphorylated sequence primer H1

<220>
<221> modified_base
<222> (1)
<223> n = phosphorylated g

<400> 10
ngaccattag gaatgtggag tcaaagtaca agtgctggac ctacggttcc ag 52

<210> 11
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:reverse primer
R2

<400> 11
acgtttatct cttattaaaa t 21

<210> 12
<211> 52
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:phosphorylated
mutagenic primer H2

<220>
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<222> (1)
<223> n = phosphorylated g

<400> 12
ngaccattag gattatgggc acaaagtaca agtgctggac ctacggttcc ag 52

<210> 13
<211> 33
<212> DNA
<213> Artificial Sequence

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<223> Description of Artificial Sequence:phosphorylated
reverse primer R1

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<222> (1)
<223> n = phosphorylated t

<400> 13
nggtgagttc gaagattttt gttttaattc tgg 33

<210> 14
<211> 52
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:mutagenic
phosphorylated primer H1

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<222> (1)
<223> n = phosphorylated t

<400> 14
ngtccaggaa gagtagttgg aggaagtaca agtgctggac ctacggttcc ag 52

<210> 15
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
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mutagenic phosphorylated primer H1

<400> 15
Cys Pro Gly Arg Val Val Gly Gly
1 5

<210> 16
<211> 46
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:phosphorylated
mutagenic primer H2

<220>
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<400> 16
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<210> 17
<211> 6
<212> PRT
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<220>
<223> Description of Artificial Sequence:encoded by
phosphorylated mutagenic primer H2

<400> 17
Gly Ser Gly Arg Ser Ala
1 5

<210> 18
<211> 46
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:phosphorylated
mutagenic primer H3

<220>
<221> modified_base
<222> (1)
<223> n = phosphorylated g

<400> 18
ngaagtggaa aatcagcaag tacaagtgct ggacctacgg ttccag 46

<210> 19
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:encoded by
phosphorylated mutagenic primer H3

<400> 19
Gly Ser Gly Lys Ser Ala
1 5

<210> 20
<211> 46
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:phosphorylated
mutagenic primer H4

<220>
<221> modified_base
<222> (1)
<223> n = phosphorylated c

<400> 20
nagagaggaa gatcagcaag tacaagtgct ggacctacgg ttccag 46

<210> 21
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:encoded by
phosphorylated mutagenic primer H4

<400> 21
Gln Arg Gly Arg Ser Ala
1 5

<210> 22
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:consensus
sequence minimized best substrate for u-PA

<400> 22
Ser Gly Arg Ser Ala
1 5

<210> 23
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PA sequence at
"furin loop"

<400> 23
Asn Ser Arg Lys Lys Arg Ser Thr Ser Ala Gly Pro Thr Val
1 5 10

<210> 24
<211> 19
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PA-U1 sequence
at "furin loop"

<400> 24
Asn Ser Pro Cys Pro Gly Arg Val Val Gly Gly Ser Thr Ser Ala Gly
1 5 10 15

Pro Thr Val

<210> 25
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PA-U2 sequence
at "furin loop"

<400> 25
Asn Ser Pro Gly Ser Gly Arg Ser Ala Ser Thr Ser Ala Gly Pro Thr
1 5 10 15

Val

<210> 26
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PA-U3 sequence
at "furin loop"

<400> 26
Asn Ser Pro Gly Ser Gly Lys Ser Ala Ser Thr Ser Ala Gly Pro Thr
1 5 10 15

Val

<210> 27
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PA-U4 sequence
at "furin loop"

<400> 27
Asn Ser Pro Gln Arg Gly Arg Ser Ala Ser Thr Ser Ala Gly Pro Thr
1 5 10 15

Val

<210> 28
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PA-U7 sequence
at "furin loop"

<400> 28
Asn Ser Pro Gly Gly Ser Thr Ser Ala Gly Pro Thr Val
1 5 10